

To: Nattis, Randy[Nattis.Randy@epa.gov]
Cc: Bruce, Ian[Ian.Bruce@WestonSolutions.com]
From: Grubb, Alex
Sent: Tue 7/29/2014 7:19:31 AM
Subject: RE: Haystack #1 AUM RSE - Equipment needs and updates
Haystack No. 1 RA Schedule and Equipment.xlsx

Ok, sorry this took me a while to get to you (got held up in meetings all afternoon, and I didn't get back on it until 9:00 tonight. Anyway, here is a brief summary of the sampling plan (below), the equipment list (attached), and a tentative schedule (attached). I still have some more edits to make to the SAP, so rather than sending you the draft in the morning, I'll wait until Wednesday once we have the DMP hammered out and I talk with Bob about a few of the other equipment details/logistics. I'll be at the R9 warehouse tomorrow, so I can check on the availability of a few items that might be useful (we can use a Weston PDR, plus we have several Trimbls, but there are more available that might be a better option). Anyway, here is the basic plan:

Haystack No. 1 Removal Assessment Summary

- *Site Description*

- o Site consists of three Abandoned Uranium Mines (Haystack No. 1, Bibo Trespass, Section 24 aka Nanabah Vandever)
- o AUM Boundaries total 118 acres (Haystack No. 1: 69 acres; Bibo Trespass: 22 acres; Section 24: 27 acres)
- o Up to 180 acres may be impacted by historical mining operations, including areas below the mesa cliff, immediately south of the site
- o Reclaimed by Newmont Mining Corp from 1990-1991
- o Former pit mine operation, with at least 8 former pits, ranging from 15 to 60 feet deep
- o 2008 Gamma Screening found gamma levels more than 40 times background
- o Years of operation: 1951-1981
- o One residence within the AUM boundaries, several other within ¼ mile, and a church is located approximately 500 feet south of Sitehur Bibo; Bibo; Bilba; Section 13; NM-B-1 lease; Railroad section

- *Surface Gamma Scanning:*

- o Surface gamma scanning will be conducted by ERT using 2 ATVs mounted with 2 VIPER-linked 3x3 gamma probes and GPS units each at 5 foot transects and a speed of 3ft/sec
- o Offsite/undisturbed 50'x50' area will be scanned to collect background comparison levels
- o Gamma scanning should take approximately 24.5 minutes per acre
- o 99% gamma scanning will be completed within the AUM boundaries
- o If gamma radiation levels outside the AUM boundaries are found to be greater than twice the mean background level, additional areas will be scanned until the horizontal extent of the contamination has been determined.
- o If the area of contamination continues into the site boundaries of the other nearby AUMs, the scan will be concluded at the adjacent AUM boundary
- o Assuming 10-hr days, 118 acres should take 4.5 days, 150 acres (125%) should take 5.75 days, and 180 acres (150%) should take 7 days

- *Subsurface Gamma Scanning:*

- o Subsurface gamma scanning will be conducted at up to 105 locations (15 per day during surface gamma scanning), sample locations were determined using a Visual Sampling Plan (VSP) approach, although locations may be moved in the field based site observations / surface gamma scanning findings
 - An Estimated 75 locations within the AUM boundaries
 - An Estimated 30 locations with the offsite step-out areas
- o An EPA-supplied GeoProbe will be operated by START personnel, mounted with a solid 2-inch steel probe
- o 2 subsurface background locations will be scanned to collect comparison levels
- o Subsurface locations will be advanced to a depth of approximately 10 feet, actual depth will be dependent upon downhole gamma scanning findings
- o A 0.5" x 1" Ludlum 44-62 will be lowered into the borehole, and stationary gamma counts will be collected at one-foot intervals (or at appropriate intervals based on field observations)
- o If warranted (i.e. collapsing/loose soil), capped 1.5" PVC tubing will be inserted into the borehole, and gamma readings will be measured inside the tubing.

- o A START Certified Health Physicist will determine if shielding is needed for the downhole probe, in which case shielding will be provided.
- o If START is able procure a downhole gamma logger (i.e. 2MGA-1000), readings will also be collected using the logger, and results will be compared to the 44-62 measurements.
- o All subsurface locations will be logged in a GPS
- o All subsurface information and geological lithography will be logged electronically into the field collection device

- *Surface Soil Sampling*

- o 4 background surface soil samples will be collected from the previously determined background area, from a depth of 0-6" bgs
- o 15 surface samples will be collected from the site and step-out areas, based on gamma scanning measurements
- o 2 duplicate samples will be collected for QA/QC
- o 1-minute stationary gamma measurements will be collected from all sample locations
- o All sample locations will be logged in a GPS
- o All sample information will be logged electronically into the field collection device
- o Photographs will be taken at each location

- *Subsurface Soil Sampling*

- o 2 background subsurface samples will be collected from the background area, at a depth determined by the downhole gamma scanning
- o 10 subsurface sample locations will be collected from the site and step-out areas, at locations and depths based on gamma scanning measurements
- o Disposable 4' acetate sleeves will be used to collect soil cores at each sampling subsurface location
- o 1-minute stationary gamma measurements will be collected from all sample locations
- o 2 duplicate samples will be collected for QA/QC
- o All sample locations will be logged in a GPS

- o All sample information and geological lithography will be logged electronically into the field collection device
- o Photographs will be taken at each location
- o Sampling equipment will be decontaminated in accordance with SOP# 2006
- o Daily equipment rinsate samples will be collected from non-dedicated sampling equipment

- *Sample Analysis*

- o Samples will be packed in an iced cooler, and shipped to the lab for analysis
- o Samples will be sent to Test America – St Louis
- o All samples will be analyzed for Radium-226 via method EML HASL 300 4.5.2.3
- o 25% of sample results will be sent to a third party validator (LDC)
- o Sample results will be reviewed by a START Certified Health Physicist
- o The action level will be the sum of the mean background level for Ra-226 and the EPA PRG of 1.21 pCi/g

- *Health and Safety*

- o The site Health and Safety Plan will be posted in the mobile command post, and in each START vehicle
- o Map to the hospital is found in the HASP
- o First Aid Kits will be kept in the command post and START vehicles
- o START will provide a Pancake Ludlum 44-9 meter to check for any cross contamination or impact to onsite personnel

- *Data Management*

- o Surface gamma scanning data / GPS will run through VIPER
- o Subsurface gamma scanning information will be electronically logged into in an iPad in imported to Scribe
- o Sample locations and descriptions info will be electronically logged and imported to Scribe

- o Analytical results will be uploaded to Scribe
- o All pertinent site info and results will be uploaded to Navajo Operational Viewer
- o 3D modelling will be performed for downhole gamma scanning measurements
- *START Personnel*
 - o 1 START will handle the data management (i.e. VIPER and Scribe) and dust monitoring via the PDR during the gamma scanning process
 - o 2 STARTs will perform surface sampling, subsurface sampling, and subsurface downhole logging using an EPA provided Geoprobe
 - o Core START Personnel:
 - Project Manager
 - [REDACTED] Alex Grubb
 - Data Manager
 - [REDACTED] Ian Bruce
 - Senior Scientist
 - [REDACTED] Tom Fortner
 - o Additional START Personnel (as needed/backup):
 - Certified Health Physicist
 - [REDACTED] Bob Schoenfelder
 - Project Scientist
 - [REDACTED] Jon Column
 - [REDACTED] Tommy Evans

From: Nattis, Randy [mailto:Nattis.Randy@epa.gov]
Sent: Monday, July 28, 2014 11:54 AM
To: Grubb, Alex
Subject: Haystack #1 AUM RSE - Equipment needs and updates

Alex,

I'm putting my the equipment needs request to the warehouse. Please provide me with a list of your needs

These are my expectations, at a minimum for the warehouse:

4 VIPER zed 2241 Ludlum's

1 VIPER radiation go kit (comes with 1 computer, 1 gateway and 3 Ludlum lincs)

1 VIPER misc radiation kit (comes with 7 Ludlum lincs)

2 VIPER (in addition to what comes in the go kit) gateways

What I'm expecting from START (at a minimum)

4 3x3 probes (rental?)

4 10 foot cables (rental?)

1 1x1 probe (for GeoProbe / vertical assessment)? Or are you planning on using something else? Do I need to request an additional meter for this from the warehouse?

Do you need a voltage meter?

Source?

Remember, the goal with equipment is to leverage the regional warehouse as best as we can (its free to the project). Anything that we do not have in house I will then look towards Weston to either provide it, if in house, or rent it.

When can I expect to review the H&S plan?

When can I expect to review the sampling and monitoring plan?

This is what is coming in from ERT:

1 MCP (with Sat dish)

2 ATVs

2 carts / buggies for ATV

1 pop up tent

2 folding tables

6 folding chairs

1 large cooler

2 gas cans for ATV refills

I also asked them to bring, if they have:

Power strips and extension cords

Misc supplies, if you have (zip tips, duct tape, Velcro)

I'm expecting to buy / fabricate the housings for the meters / probes Monday and Tuesday.

What else?

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